

TABLE NO. 1.—Flood stages during month of July, 1920.

River and station.	Flood stage.	Above flood stages—dates.		Crest.	
		From—	To—	Stage.	Date.
Atlantic Drainage:	<i>Fect.</i>			<i>Fect.</i>	
Neuse: Neuse, N. C.....	14	20	22	17.2	21
Smithfield, N. C.....	14	21	23	19.3	22
Cape Fear: Elizabethtown, N. C.....	22	22	25	20.9	23
Fayetteville, N. C.....	35	21	23	41.6	21
Haw: Moncure, N. C.....	22	20	20	23.2	20
Santee: Rimini, S. C.....	12	23	27	13.0	25, 26
Ferguson, S. C.....	12	25	30	12.7	27
Saluda: Pelzer, S. C.....	7	22	22	7.0	22
Mississippi Drainage:					
Little Kanawha: Glenville, W. Va.....	22	25	25	23.9	25
Des Moines: Ottumwa, Iowa.....	10	14	16	11.0	16
Grand: Brunswick, Mo.....	10	(1)	19	12.3	1, 2
West Gulf Drainage:					
Grand: State Bridge, Colo.....	9	(1)	2	9.1	1
Pacific Drainage:					
Columbia: Marcus, Wash.....	24	(1)	(*)	28.5	15-19

<sup>1</sup> Continued from June.  
<sup>2</sup> Continued into August.

## MEAN LAKE LEVELS DURING JULY, 1920.

By UNITED STATES LAKE SURVEY.

[Dated: Detroit, Mich., August 4, 1920.]

The following data are reported in the "Notice to Mariners" of the above date:

Data.	Lakes. <sup>1</sup>			
	Superior.	Michigan and Huron.	Erie.	Ontario.
Mean level during July, 1920:	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>	<i>Fect.</i>
Above mean sea level at New York.....	602.94	581.03	572.63	245.70
Above or below—				
Mean stage of June, 1920.....	+0.19	+0.17	+0.14	+0.14
Mean stage of July, 1919.....	+0.40	—0.31	—0.81	—2.05
Average stage for July, last 10 years.....	+0.50	+0.11	—0.19	—1.15
Highest recorded July stage.....	—0.88	—2.55	—1.70	—3.02
Lowest recorded July stage.....	+1.46	+1.13	+1.17	+1.11
Average relation of the July level to—				
June level.....		+0.10	—0.10	—0.10
August level.....		+0.10	+0.20	+0.30

<sup>1</sup> Lake St. Clair's level: In July, 575.63 feet.

## EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, JULY, 1920.

By J. B. KINCER, Meteorologist.

The weather during July was generally favorable to farming interests. As is usual in this month, precipitation was rather unevenly distributed geographically and was heavy in limited areas, particularly in portions of Florida, the extreme lower Mississippi Valley, and in some south Atlantic districts; the temperature averaged near the normal in most sections of the country. Soil moisture was mostly ample for crop needs generally, although at the close of the month rain was needed in many central and northern and some southern parts of the country. It was rather cool for best development of warm-weather crops during part of the month in most central and northern districts east of the Mississippi.

The absence of extended rainy periods was unusually favorable for harvesting and the thrashing of small grains, and the harvest of winter wheat was completed by the end of the month in nearly all central and eastern districts and in most of the Central Rocky Mountain States, under favorable conditions. At the close of the month the harvest of spring wheat was also under way in the eastern part of the belt, and this crop was nearing maturity in the western portion. Spring wheat, which was in very satisfactory condition at the beginning of the month in the principal producing areas, was favorably affected by the weather of the first half of the month generally. During the latter half, however, rust became prevalent in many districts, and there was insufficient moisture in some sections. The high temperatures during the last decade in the north-central portion of the belt was conducive to the propagation of black rust, and considerable complaint was received of damage from this disease. There was a falling off in the condition of the crop during the month in all States of the belt, except in North Dakota, the deterioration being marked in Minnesota, Nebraska, and Montana, and rather pronounced in South Dakota and Iowa. At the close of the month the condition of the crop continued above the average in North Dakota, and was near the average in Idaho and South Dakota, but elsewhere it was unsatisfactory, especially in Washington and Iowa.

The warmer weather that prevailed in central and southwestern districts the first of the month favorably affected corn, and that crop made satisfactory progress in nearly all sections; thereafter mostly favorable weather prevailed for this crop, although it was rather cool for best growth in some east-central and northeastern localities. The weather was very favorable in the lower Great Plains, and corn made excellent advance during the month in that area, where the condition at the end of the month was from 40 to 70 per cent above the 10-year average, as reported by the Bureau of Crop Estimates. Late in the month, however, rain was needed in much of the central and upper Mississippi Valley, and in the western portions of Kansas, Nebraska, and Oklahoma. At the close of the month the condition of corn was better than the 10-year average quite generally, except in portions of the South and Northeast and in Illinois, where it was somewhat below the average.

Cotton made steady improvement during the first two decades of the month under the influence of favorable weather conditions, but during the last decade the progress was variable, the weather being rather unfavorable for growth in Florida, Alabama, parts of Mississippi, and in Louisiana, where frequent rains and lack of sunshine caused shedding and weevil activity. At the close of the month the crop was in better condition than at the beginning in nearly all sections of the belt, the improvement being more substantial in Texas, Oklahoma, and Tennessee than in the other States. There was practically no change in the condition, however, in Louisiana.

Oats and barley did well during the month, and the weather was mostly favorable for harvest; while potatoes, truck, and minor crops made satisfactory advance in most sections, although near the close of the month rain was badly needed for gardens and vegetables in many central and north-central localities, in the far Northwest, and at some places in the South. Pastures, ranges, and fruit maintained mostly satisfactory condition during the month, and live stock continued in good shape.